

a picture signal line driving circuit which applies a picture signal voltage to the liquid crystal display panel, the picture signal line driving circuit including a switching circuit;

wherein the switching circuit includes

a first transistor having an input, an output, and a gate electrode, the gate electrode of the first transistor having a control voltage applied thereto, the control voltage being effective for turning the first transistor on and off, and

a second transistor having an input, an output, and a gate electrode, the gate electrode of the second transistor having a bias voltage applied thereto,

the input of the second transistor being connected to the output of the first transistor so that the first transistor and the second transistor are connected in series.

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cont. 14. (New) A liquid crystal display device according to claim 13, wherein the picture signal line driving circuit further includes:

a first amplifier circuit which applies an output voltage to the input of the first transistor, and

a second amplifier circuit which applies an output voltage to the output of the second transistor; and

wherein the following relationship is satisfied in the switching circuit when the first transistor is turned off:

$$|V1-V2| > |V4-V3|$$

where

V1 is a maximum voltage of the output voltage of the first amplifier circuit,

V2 is a minimum voltage of the output voltage of the second amplifier circuit,

V3 is the bias voltage applied to the gate electrode of the second transistor, and

V4 is a voltage of the input of the first transistor.

15. (New) A liquid crystal display device according to claim 13, wherein the bias voltage applied to the gate electrode of the second transistor is a first bias voltage; and

wherein the first transistor and the second transistor are formed in a well layer having a second bias voltage applied thereto.

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16. (New) A liquid crystal display device according to claim 15, wherein the second bias voltage is different from the first bias voltage.

17. (New) A liquid crystal display device according to claim 13, wherein the switching circuit further includes a third transistor connected in parallel with the first transistor;

wherein the first transistor and the second transistor are first conducting-type transistors; and

FIG 19

wherein the third transistor is a second conducting-type transistor.

18. (New) A liquid crystal display device according to claim 13, wherein the first transistor and the second transistor are formed in a well layer; and

wherein a voltage of the well layer is equal to a voltage of the input of the first transistor.

19. (New) A liquid crystal display device comprising:

a liquid crystal display panel; and

a picture signal line driving circuit which applies a picture signal voltage to the liquid crystal display panel, the picture signal line driving circuit including

a first input terminal,

a second input terminal,

a common output terminal,

a first switching circuit having an input connected to the first input terminal and an output connected to the common output terminal, and

a second switching circuit having an input connected to the second input terminal and an output connected to the common output terminal;

wherein each of the first switching circuit and the second switching circuit includes

a first transistor having an input, an output, and a gate electrode, the gate electrode of the first transistor

having a control voltage applied thereto, the control voltage being effective for turning the first transistor on and off, and

a second transistor having an input, an output, and a gate electrode, the gate electrode of the second transistor having a bias voltage applied thereto,

the input of the first transistor being connected to the input of the switching circuit,

the input of the second transistor being connected to the output of the first transistor so that the first transistor and the second transistor are connected in series, and

c/ cont. the output of the second transistor being connected to the output of the switching circuit.

20. (New) A liquid crystal display device according to claim 19, wherein the picture signal line driving circuit further includes

a first amplifier circuit which applies an output voltage to the first input terminal, and

a second amplifier circuit which applies an output voltage to the second input terminal; and

wherein the following relationship is satisfied in each of the first switching circuit and the second switching circuit when the first transistor is turned off:

$$|V_1 - V_2| > |V_4 - V_3|$$

where

V1 is a maximum voltage of the output voltage of the first amplifier circuit,

V2 is a minimum voltage of the output voltage of the second amplifier circuit,

V3 is the bias voltage applied to the gate electrode of the second transistor, and

V4 is a voltage of the input of the first transistor.

21. (New) A liquid crystal display device according to claim 19, wherein the bias voltage applied to the gate electrode of the second transistor is a first bias voltage; and

wherein the first transistor and the second transistor are formed in a well layer having a second bias voltage applied thereto.

22. (New) A liquid crystal display device according to claim 21, wherein the second bias voltage is different from the first bias voltage.

23. (New) A liquid crystal display device according to claim 19, wherein each of the first switching circuit and the second switching circuit further includes a third transistor connected in parallel with the first transistor;

wherein, in the first switching circuit, the first transistor and the second transistor are first conducting-type

transistors, and the third transistor is a second conducting-type transistor; and

wherein, in the second switching circuit, the first transistor and the second transistor are second conducting-type transistors, and the third transistor is a first conducting-type transistor.

24. (New) A liquid crystal display device according to claim 19, wherein the first transistor and the second transistor are formed in a well layer; and

wherein a voltage of the well layer is equal to a voltage of the input of the first transistor.

25. (New) A liquid crystal display device comprising:

a liquid crystal display panel including a first picture signal line and a second picture signal line; and

a picture signal line driving circuit which applies a picture signal voltage to the liquid crystal display panel, the picture signal line driving circuit including

a first output circuit which outputs a positive-polarity picture signal voltage,

a second output circuit which outputs a negative-polarity picture signal voltage,

a first switching circuit having an input connected to the first output circuit and an output connected to the first picture signal line,

a second switching circuit having an input connected to the second output circuit and an output connected to the second picture signal line,

a third switching circuit having an input connected to the first output circuit and an output connected to the second picture signal line, and

a fourth switching circuit having an input connected to the second output circuit and an output connected to the first picture signal line;

wherein each of the first switching circuit, the second switching circuit, the third switching circuit, and the fourth switching circuit includes

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a first transistor having an input, an output, and a gate electrode, the gate electrode of the first transistor having a control voltage applied thereto, the control voltage being effective for turning the first transistor on and off,

a second transistor having an input, an output, and a gate electrode, the gate electrode of the second transistor having a bias voltage applied thereto,

the input of the first transistor being connected to the input of the switching circuit,

the input of the second transistor being connected to the output of the first transistor so that the first transistor and the second transistor are connected in series, and

the output of the second transistor being connected to the output of the switching circuit;

wherein the positive-polarity picture signal voltage output from the first output circuit is applied to the first picture signal line and the negative-polarity picture signal voltage output from the second output circuit is applied to the second picture signal line by turning on the first transistor of the first switching circuit and the first transistor of the second switching circuit, and turning off the first transistor of the third switching circuit and the first transistor of the fourth switching circuit; and

C1 cont wherein the positive-polarity picture signal voltage output from the first output circuit is applied to the second picture signal line and the negative-polarity picture signal voltage output from the second output circuit is applied to the first picture signal line by turning off the first transistor of the first switching circuit and the first transistor of the second switching circuit, and turning on the first transistor of the third switching circuit and the first transistor of the fourth switching circuit.

26. (New) A liquid crystal display device according to claim 25, wherein the following relationship is satisfied in each of the first switching circuit, the second switching circuit, the third switching circuit, and the fourth switching circuit when the first transistor is turned off:

$$|V1-V2| > |V4-V3|$$

where

V1 is a maximum voltage of the output voltage of the first output circuit,

V2 is a minimum voltage of the output voltage of the second output circuit,

V3 is the bias voltage applied to the gate electrode of the second transistor, and

V4 is a voltage of the input of the first transistor.

27. (New) A liquid crystal display device according to claim 25, wherein the bias voltage applied to the gate electrode of the second transistor is a first bias voltage; and

C1 cont wherein the first transistor and the second transistor are formed in a well layer having a second bias voltage applied thereto.

28. (New) A liquid crystal display device according to claim 27, wherein the second bias voltage is different from the first bias voltage.

29. (New) A liquid crystal display device according to claim 25, wherein each of the first switching circuit, the second switching circuit, the third switching circuit, and the fourth switching circuit further includes a third transistor connected in parallel with the first transistor;

wherein, in the first switching circuit and the third switching circuit, the first transistor and the second

transistor are first conducting-type transistors, and the third transistor is a second conducting-type transistor; and wherein, in the second switching circuit and the fourth switching circuit, the first transistor and the second transistor are second conducting-type transistors, and the third transistor is a first conducting-type transistor.

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cancel.* 30. (New) A liquid crystal display device according to claim 25, wherein the first transistor and the second transistor are formed in a well layer; and

wherein a voltage of the well layer is equal to a voltage of the input of the first transistor.--